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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/029,035 | 12/28/2001 | Young Ho Bae | 2658-0280P | 3483 |
| 2292 | 7590 | 04/19/2004 | EXAMINER | |
| BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747 | | | KACKAR, RAM N | |
| | | ART UNIT | PAPER NUMBER | |
| | | 1763 | | |

DATE MAILED: 04/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|---------------|----|
| Office Action Summary | Application No. | Applicant(s) | AS |
| | 10/029,035 | BAE, YOUNG HO | |
| | Examiner | Art Unit | |
| | Ram N Kackar | 1763 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 01 March 2004.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 01 March 2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) Interview Summary (PTO-413)
Paper No(s)/Mail Date, _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Specification

1. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms and phrases which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms or phrases used in the specification are:

In paragraph 0017 - The glass substrate 4 is slid by the robot arm 8 and safely placed on the surface of the susceptor 10. At this moment, the susceptor 10 applies heat to the glass substrate 4 and is used as a lower electrode for generating plasma.

In paragraph 0020 – The possibility of this occurrence increases because a bend of the substrate becomes severe due to the enlargement of the substrate.

In paragraph 0042 – Also, because the glass substrate 34 is placed on the surface of the susceptor 30 with an angle of 85 degree for being safely placed, the glass substrate 34 is safely placed on the susceptor 30 inclined to one side. As a result, the friction between the surface of the susceptor 30 and the glass substrate 34 changes causing the film forming material to collect at the slide part 42 of the susceptor 30.

These are just examples of the often confusing and inconsistent disclosure. The specification in general introduces concepts without adequate explanation and may contain errors perhaps due to translation from a foreign language.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a) because they fail to show stopper pins in drawings 6-9 and especially Fig 10A-10C as described in the specification. Also in Fig 5 the stopper pins are in side the groove, which is not covered by the substrate while in Fig 10A-C the groove is covered by the substrate. In fig 5 and 6 all parts are not labeled, specially the edge of the so-called slide 42. The loading of the substrate at an angle of 85 is not shown by drawing.

Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-8 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In this instance

(1) The problem caused by the friction or the relationship of the difference between the substrate and the susceptor to the damage caused is not clear.

(2) Stopper pin facilitating the stable transfer has not been described in the specification.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this instance the distance between slide part and stopper pin is claimed to be 3 or 10 mm while in drawing 5 stopper is part of the slide part. It is unclear from which edge of the slide part is this distance measured.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Tepman et al (US 5589224).

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD sputtering, ion implanters etc (Col 1 lines 10-19), lift pins (Fig 1-30), robot arm (Fig 4 and Col 2 lines 13-16), stopper pin for helping in alignment and centering (Fig 3-40) and groove around susceptor to collect deposition so that build up may not cause problem by sticking to the substrate (Fig 3-38 and Col 4 lines 54-63). The addition of limitation relating to the generation of film forming

material by friction is neither a structural limitation nor points to a structural limitation and hence has no patentable weight.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tepman et al (US 5589224) in view of Rempei Nakata (US 5119761).

Tepman et al disclose a vacuum deposition apparatus for PVD, CVD sputtering, ion implanters etc and a susceptor but do not disclose the susceptor to be made of Quartz.

Quartz susceptors are common for thermal processing for its thermal insulation properties.

Rempei Nakata discloses a quartz susceptor (Fig 12-106 and Col 1 lines 44-49).

Therefore it would have been obvious for one of ordinary skill in the art at the time of invention to have a susceptor of quartz for its excellent thermal properties of insulation.

10. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tepman et al (US 5589224).

Tepman et al disclose groove but do not disclose different shapes of the bottom of the groove. Since the purpose of the groove is to collect deposition and applicant has not disclosed any special advantage of a particular shape at the bottom they are considered art equivalent and therefore obvious.

Response to Amendment

Applicant's arguments filed 3/1/2004 have been fully considered but they are not persuasive.

Applicant has inadequately attempted to fix the deficiencies of the specification and drawings as objected in the last office action. The sequence of loading and unloading the substrate and the problem of unstable transfer is not clearly explained.

Paragraph 17 cites the phrase "The glass substrate 4 is slid by the robot arm 8 and safely placed on the surface of the susceptor 10". This is not understood, since in paragraph 14 the substrate is placed on the lift pins and not pushed on to the susceptor directly at an angle.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 571 272 1436. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571 272 1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RK



GREGORY MILLS
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